REQUEST FOR RECONSIDERATION

The present invention relates to a bonded composite material of a brass-plated material or brass material and rubber. Reconsideration of the present invention is requested in view of the following:

Claims 1-4 have been rejected under 35 U.S.C. § 103(a) as obvious over Peter (EP 928679) and further in view of Heishi (US Patent No. 6,974,654).

The rejection is respectfully traversed, since the references, alone or in combination, do not describe or suggest each of the required elements of the composite material of the claimed invention.

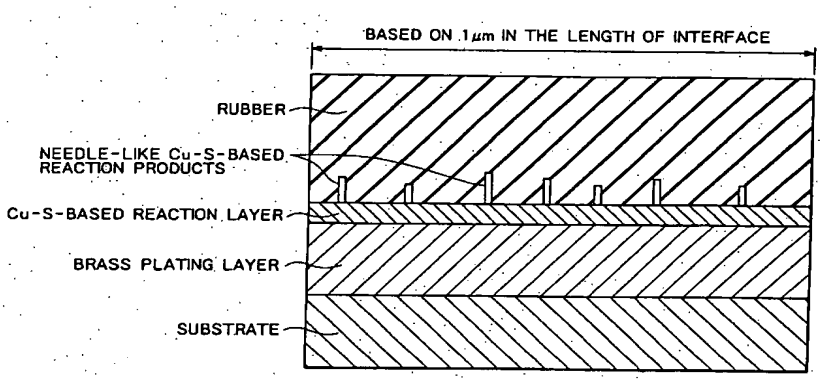
The Peter reference generally describes a method of bonding rubber to a carcass, in the which carcass includes a tire body. (See Abstract). However, the Peter reference does not describe improving adhesion between brass plating and rubber, by controlling the reaction products ("needle-like Cu-S-based reaction products") formed at the interface between the brass plating and rubber. Unlike the present invention, the reference describes several filling, mixing, spraying, heating, and curing steps that do not indicate that needle-like Cu-S-based reaction products are even present or controlled in a preheating stage. (See Abstract).

Moreover, the Heishi reference does not cure the deficiencies of the Peter reference, since there is no indication of the claimed preheating and/or any control of needle-like Cu-S-based reaction products, in which improved adhesion would be obtained. The reference merely refers to tire reinforced by steel cords embedded as a reinforcing layer in rubber. (See generally column 1, line 61 to column 2, line 11).

By contrast, the present invention, as represented by claim 1 below, requires the following:

> A composite material prepared by bonding rubber to the surface of a brass-plated material obtained by plating the surface of a substrate with brass or to the surface of a brass material by vulcanization, wherein needle-like Cu-S-based reaction products are formed at the bonding interface between brass and rubber, and wherein preheating is carried out at 80 to 120° C before vulcanization.

A non-limiting illustration of the present invention is shown in Figure 2 of the present specification, which is reproduced below.



The present inventors have found that the claimed invention provides a rubber-bonded brass composite material that has high initial adhesion at the time of bonding by vulcanization and long-term adhesion. The claimed composite material overcomes the difficulties and deficiencies of conventional materials and techniques that do not meet recent industry demands for better bonding strength and long term adhesion. As such a composite material is not described or suggested by the Peter and/or Heishi references, the claimed invention is unobvious in view of the references.

Accordingly, withdrawal of the rejection is respectfully requested.

Applicants submit that this application is now in condition for allowance and early notification of such is earnestly solicited.

Should the Examiner deem that any further action is necessary to place this application in even better form for allowance, the Examiner is encouraged to contact Applicants' undersigned representative at the below listed telephone number.

Respectfully submitted,

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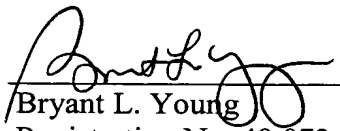

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